DROUGHT MONITORING TASK FORCE

Drought Status Report

August 20, 2009

Statewide precipitation for the period from October 1, 2007 through August 15, 2009 was normal (94% of normal). Precipitation greater than 85% of normal is considered to be in the normal range. No drought evaluation regions were below normal for this time period although precipitation deficits still persist in eleven of the thirteen drought evaluation regions. Only the Southeast Virginia and Eastern Shore drought evaluation regions have received precipitation above 100% of normal for this time period. Statewide precipitation for the current water year (from October 1, 2008 through August 15, 2009) is normal (95%). Precipitation is now above normal for all drought evaluation areas for the current water year with the exception of the Middle James (85%). Statewide precipitation from July 1st through August 15, 2009 was in the normal range (94%), with six drought evaluation regions receiving precipitation greater than 100% of normal and seven drought evaluation regions receiving below 100% of normal. It is worth noting that several drought evaluation regions (Middle James, Northern Virginia, Northern Piedmont, Northern Coastal) have seen a pretty dramatic drop off in precipitation since July 1, which may result in some localized drought conditions should this continue for any significant period of time. Appendix A contains precipitation tables for periods dating from October 1, 2007 provided by the Climatology Office of the University of Virginia and the Virginia Department of Environmental Quality.

The National Weather Service Climate Prediction Center 6-10 day and 8-14 day climatologic outlooks call for above normal precipitation for the Commonwealth. Temperatures are expected to be below normal during these periods. The three month outlook calls for equal chances of below normal, normal and above normal precipitation and temperatures for the Commonwealth through the middle of October 2009.

The latest NOAA drought monitor indicates "abnormally dry" conditions exist in south central Virginia along the North Carolina border, southeastern Virginia and portions of the Middle Peninsula and the Northern Neck. The total area experiencing "abnormally dry" conditions has increased over a three month period from less than 1% to approximately 17% of the Commonwealth's land area. The U.S. National Drought Monitor is included as Appendix B. Appendix C contains information from the national drought monitor with only Virginia displayed. No changes are forecasted for any part of Virginia in the Seasonal Drought Outlook for the United States from now through October 2009 (see Appendix D).

While the Virginia Department of Health has not reported any impacts to public water supplies that have compromised their ability to provide the needs of their customers, 23 systems are under voluntary water conservation requirements and 2 systems are under mandatory water conservation requirements. The number of systems under restrictions has remained unchanged since July 2009. Of the 49 systems listed in the VDH report, 2 have been rated as having a "Better" overall water supply situation, 3 have been rated as having a "Worse" overall water supply situation and all other systems are reported as being in a "Stable" situation. Appendix E contains a table of waterworks from this month's report, which includes systems that are under water conservation requirements.

The Virginia Department of Forestry reports very light fire activity in August 2009. From January 1st through August 18th, the VDOF responded to 849 wild land fires that burned 6,928 acres. Since the May 21, 2009 Drought Status Report, 47 wild land fires that burned 92 acres were reported.

The Department of Game and Inland Fisheries reports that spring flows at all trout hatcheries are still in good condition for this time of the year. There are currently no public boat ramp closures due to low stream flows or low reservoirs levels.

Reports from the Climatology Office of the University of Virginia, the Virginia Department of Environmental Quality, the United States Geological Survey, and the Virginia Department of Agriculture and Consumer Services, follow.

Report of the Climatology Office of the University of Virginia

Rainfall in July and early August has varied considerably from one Drought Region to another, with highest values in the southeast and southwest, while the lowest amounts are primarily found in northern and central regions. The generally spotty nature of summer thunderstorm activity has also given rise to a great deal of variation in precipitation within the regions — which the averaged values cannot show. In many cases a given thunderstorm outbreak has left rainfall totals differing by more than two inches across a single county.

A big factor in the moisture situation this summer has been the generally low temperatures for the month of July, especially the daytime high temperatures. This has meant not only less sweltering conditions, but also lower rates of evaporation than would otherwise be expected.

With the high point of the hurricane season upon us, the likelihood of receiving significant moisture across a substantial portion of the Commonwealth from tropical systems and their remnants is increasing. Recently, the Atlantic has seen its first three named storms and more will undoubtedly follow. On average, such systems contribute as much as 40% of the moisture received in the latter part of the growing season.

United States Geological Survey
Streamflow and Ground Water Levels

Continued precipitation across the State has maintained surface-water flow at gages and ground-water levels at monitoring wells near normal for this time of year. There have been localized areas where precipitation has been less and streamflows have dropped to below normal. Streamflow gages in the lower Rappahannock and York River Basins are recording flows slightly below normal for August. Low seasonal temperatures have reduced moisture losses to evaporation.

Virginia Department of Environmental Quality
Conditions of Major Reservoirs

Levels of large reservoirs statewide are generally normal for August. However, many reservoirs have exhibited a declining trend for the month.

- Lake Moomaw on the Jackson River has declined approximately 2.3 feet since August 4, 2009 and currently has 69% of its conservation storage remaining.
- Smith Mountain Lake is approximately 0.5 feet below full and has remained relatively stable over the last week.
- Phillpott Lake is approximately 0.1 feet above guide curve but is anticipated to drop approximately 0.75 feet over the next week without additional rainfall. Kerr Lake is 2.5 feet below guide curve and is anticipated to drop 0.5 feet over the next week without additional rainfall. Both Philpott Lake and Kerr Reservoir are under minimum energy declaration meaning that they are releasing the minimum amount of water necessary to fulfill energy contracts.
- South Holston Lake, straddling the Virginia and Tennessee border, is within the normal range and above the balancing guide.
- The two major reservoirs for the Roanoke area, Carvins Cove and Spring Hollow Reservoirs are 1.3 feet and 1.2 feet below full, respectively. These levels correspond to 96% storage remaining at Carvins Cove and 98% storage remaining at Spring Hollow.

- The Rivanna Water and Sewer Authority reservoirs are full with the exception of Ragged Mountain and Sugar Hollow. Ragged Mountain is kept 3 feet below full from July through September in accordance with dam safety procedures. The Sugar Hollow Reservoir is currently 1.5 feet below full.

Virginia Department of Agriculture and Consumer Services
Status of Agricultural Drought

According to the USDA Crop Weather Report released on August 10, 2009, 81% of topsoil moisture ranged from adequate to surplus. Rainfall continues to be sporadic around the state with some areas receiving adequate rainfall and others receiving very little, often within the same locality. Recent high temperatures have decreased some surface moisture.

Impact on Crops:
Overall, producers are reporting that recent rains have been beneficial for soybeans, cotton and peanuts. Early planted corn has suffered the most from dry conditions. Summer crops are in the process of being harvested and preparation of fall plantings are underway.

Impact on Nursery/Horticulture:
The nursery industry reports that they are not experiencing any significant drought impacts at this time. There are adequate sources of water for irrigation and watering due to the relatively cooler temperatures in July. The water usage will increase with the elevated temperatures of August.

Impact on Livestock:
Overall, pastures are in good conditions. There is a minimum amount of over-grazing around the state. It has been many years since pasture conditions have remained this in early August. Seasonal high rain fall has preserved pastures and allowed for extended grazing of stockers and cows. Therefore market numbers are down slightly especially from last year.

Impact on Creeks, Rivers, and Wells:
There are no recent reports of any wells going dry.

APPENDIX A
Precipitation Departures by Drought Evaluation Region

PRELIMINARY PRECIPITATION SUMMARY

Prepared: 8/17/09

	DROUGHT REGION	OBSERVED	Aug 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	3.16	1.85	1.31	171%
2	New River	2.53	1.60	0.93	158%
3	Roanoke	1.65	1.80	-0.15	92%
4	Upper James	1.50	1.61	-0.11	93%
5	Middle James	1.18	1.85	-0.67	64%
6	Shenandoah	1.56	1.61	-0.06	97%
7	Northern Virginia	1.40	1.86	-0.46	75%
8	Northern Piedmont	1.28	1.85	-0.57	69%
9	Chowan	2.14	2.09	0.05	103%
10	Northern Coastal Plain	0.93	1.87	-0.94	50%
11	York-James	1.55	2.36	-0.81	66%
12	Southeast Virginia	6.77	2.48	4.29	273%
13	Eastern Shore	3.08	1.87	1.20	164%
	Statewide	1.94	1.85	0.09	105%

	DROUGHT REGION	OBSERVED	Jul 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	8.78	6.33	2.45	139%
2	New River	6.70	5.39	1.31	124%
3	Roanoke	5.42	6.19	-0.77	87%
4	Upper James	6.54	5.65	0.88	116%
5	Middle James	4.47	6.26	-1.78	71%
6	Shenandoah	4.71	5.37	-0.66	88%
7	Northern Virginia	3.15	5.63	-2.48	56%
8	Northern Piedmont	4.11	6.25	-2.14	66%
9	Chowan	6.00	6.60	-0.60	91%
10	Northern Coastal Plain	4.15	6.32	-2.16	66%
11	York-James	9.09	7.46	1.63	122%
12	Southeast Virginia	10.25	7.55	2.70	136%
13	Eastern Shore	8.82	5.87	2.94	150%
	Statewide	5.80	6.19	-0.39	94%

	DROUGHT REGION	OBSERVED	Jun 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	14.06	10.47	3.59	134%
2	New River	11.64	9.24	2.40	126%
3	Roanoke	11.46	10.08	1.38	114%
4	Upper James	10.01	9.36	0.65	107%
5	Middle James	8.98	9.77	-0.79	92%
6	Shenandoah	9.50	9.08	0.42	105%
7	Northern Virginia	8.92	9.49	-0.58	94%
8	Northern Piedmont	9.78	10.26	-0.48	95%
9	Chowan	11.83	10.25	1.58	115%
10	Northern Coastal Plain	9.29	9.88	-0.58	94%
11	York-James	12.63	10.87	1.76	116%
12	Southeast Virginia	15.32	11.16	4.16	137%
13	Eastern Shore	12.29	8.85	3.44	139%
	Statewide	10.89	9.98	0.91	109%

	DROUGHT REGION	OBSERVED	May 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	20.67	15.29	5.38	135%
2	New River	19.36	13.45	5.91	144%
3	Roanoke	17.69	14.41	3.28	123%
4	Upper James	16.55	13.64	2.91	121%
5	Middle James	14.50	14.01	0.49	104%
6	Shenandoah	16.26	12.92	3.34	126%
7	Northern Virginia	16.89	13.83	3.05	122%
8	Northern Piedmont	16.84	14.48	2.36	116%
9	Chowan	17.31	14.34	2.97	121%
10	Northern Coastal Plain	14.24	14.04	0.21	101%
11	York-James	17.94	15.14	2.80	119%
12	Southeast Virginia	20.25	15.02	5.23	135%
13	Eastern Shore	15.88	12.37	3.51	128%
	Statewide	17.12	14.24	2.88	120%

	DROUGHT REGION	OBSERVED	Apr 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	23.71	19.05	4.66	124%
2	New River	22.25	17.00	5.25	131%
3	Roanoke	20.91	18.21	2.70	115%
4	Upper James	20.09	17.04	3.05	118%
5	Middle James	17.47	17.35	0.12	101%
6	Shenandoah	19.58	15.84	3.74	124%
7	Northern Virginia	21.03	17.13	3.89	123%
8	Northern Piedmont	20.39	17.77	2.62	115%
9	Chowan	19.40	17.77	1.64	109%
10	Northern Coastal Plain	17.09	17.13	-0.04	100%
11	York-James	21.48	18.44	3.04	117%
12	Southeast Virginia	22.95	18.27	4.68	126%
13	Eastern Shore	18.40	15.29	3.10	120%
	Statewide	20.21	17.66	2.55	114%

	DROUGHT REGION	OBSERVED	Mar 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	28.02	23.30	4.71	120%
2	New River	26.65	20.67	5.98	129%
3	Roanoke	25.42	22.48	2.94	113%
4	Upper James	23.28	20.83	2.45	112%
5	Middle James	21.53	21.41	0.12	101%
6	Shenandoah	21.62	19.04	2.58	114%
7	Northern Virginia	23.55	20.79	2.75	113%
8	Northern Piedmont	24.13	21.58	2.55	112%
9	Chowan	25.76	22.14	3.62	116%
10	Northern Coastal Plain	23.51	21.41	2.10	110%
11	York-James	27.49	23.13	4.36	119%
12	Southeast Virginia	29.17	22.47	6.70	130%
13	Eastern Shore	23.31	19.60	3.70	119%
	Statewide	24.55	21.70	2.85	113%

	DROUGHT REGION	OBSERVED	Feb 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	30.12	26.88	3.23	112%
2	New River	27.80	23.60	4.20	118%
3	Roanoke	26.48	25.79	0.69	103%
4	Upper James	24.21	23.68	0.53	102%
5	Middle James	22.13	24.53	-2.40	90%
6	Shenandoah	22.11	21.45	0.66	103%
7	Northern Virginia	24.01	23.46	0.54	102%
8	Northern Piedmont	24.69	24.55	0.14	101%
9	Chowan	26.55	25.31	1.24	105%
10	Northern Coastal Plain	23.84	24.55	-0.71	97%
11	York-James	28.43	26.66	1.77	107%
12	Southeast Virginia	30.13	25.97	4.16	116%
13	Eastern Shore	23.69	22.79	0.90	104%
	Statewide	25.44	24.83	0.60	102%

	DROUGHT REGION	OBSERVED	Jan 1, 2009 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	35.67	30.61	5.06	117%
2	New River	31.30	26.81	4.48	117%
3	Roanoke	29.85	29.71	0.14	100%
4	Upper James	27.31	26.96	0.35	101%
5	Middle James	24.38	28.19	-3.81	86%
6	Shenandoah	24.28	24.30	-0.03	100%
7	Northern Virginia	26.53	26.74	-0.21	99%
8	Northern Piedmont	26.88	28.07	-1.19	96%
9	Chowan	28.65	29.42	-0.76	97%
10	Northern Coastal Plain	25.75	28.30	-2.55	91%
11	York-James	30.33	30.80	-0.47	98%
12	Southeast Virginia	32.15	30.13	2.02	107%
13	Eastern Shore	25.52	26.35	-0.84	97%
	Statewide	28.31	28.47	-0.17	99%

	DROUGHT REGION	OBSERVED	Dec 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	40.50	34.25	6.25	118%
2	New River	34.64	29.52	5.12	117%
3	Roanoke	33.58	32.96	0.62	102%
4	Upper James	30.76	29.91	0.85	103%
5	Middle James	28.32	31.36	-3.04	90%
6	Shenandoah	27.90	26.89	1.01	104%
7	Northern Virginia	29.54	29.84	-0.31	99%
8	Northern Piedmont	30.45	31.35	-0.90	97%
9	Chowan	32.52	32.44	0.09	100%
10	Northern Coastal Plain	28.71	31.58	-2.87	91%
11	York-James	34.43	34.19	0.24	101%
12	Southeast Virginia	35.98	33.31	2.67	108%
13	Eastern Shore	30.66	29.59	1.07	104%
	Statewide	32.07	31.59	0.48	102%

	DROUGHT REGION	OBSERVED	Nov 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	43.05	37.53	5.51	115%
2	New River	36.32	32.55	3.77	112%
3	Roanoke	36.57	36.32	0.25	101%
4	Upper James	33.17	33.27	-0.10	100%
5	Middle James	31.42	34.87	-3.44	90%
6	Shenandoah	29.79	29.94	-0.15	100%
7	Northern Virginia	31.61	33.25	-1.64	95%
8	Northern Piedmont	32.81	35.15	-2.33	93%
9	Chowan	35.76	35.55	0.22	101%
10	Northern Coastal Plain	32.31	34.72	-2.41	93%
11	York-James	38.79	37.56	1.23	103%
12	Southeast Virginia	40.95	36.38	4.57	113%
13	Eastern Shore	35.38	32.53	2.85	109%
	Statewide	34.88	34.82	0.06	100%

	DROUGHT REGION	OBSERVED	Oct 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	44.82	40.41	4.41	111%
2	New River	37.51	35.72	1.79	105%
3	Roanoke	38.35	40.03	-1.68	96%
4	Upper James	34.57	36.52	-1.95	95%
5	Middle James	33.02	38.71	-5.69	85%
6	Shenandoah	31.42	33.13	-1.71	95%
7	Northern Virginia	33.09	36.73	-3.64	90%
8	Northern Piedmont	34.46	39.14	-4.68	88%
9	Chowan	37.21	39.13	-1.92	95%
10	Northern Coastal Plain	33.85	38.23	-4.38	89%
11	York-James	40.48	41.09	-0.61	99%
12	Southeast Virginia	42.44	40.04	2.40	106%
13	Eastern Shore	36.50	35.74	0.75	102%
	Statewide	36.45	38.32	-1.87	95%

	DROUGHT REGION	OBSERVED	Sep 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	46.90	43.87	3.03	107%
2	New River	40.05	39.13	0.92	102%
3	Roanoke	42.69	44.26	-1.57	96%
4	Upper James	36.71	40.02	-3.31	92%
5	Middle James	38.23	42.84	-4.61	89%
6	Shenandoah	35.17	36.80	-1.64	96%
7	Northern Virginia	38.85	40.80	-1.95	95%
8	Northern Piedmont	39.77	43.42	-3.65	92%
9	Chowan	43.82	43.56	0.27	101%
10	Northern Coastal Plain	38.91	42.32	-3.41	92%
11	York-James	46.40	45.99	0.41	101%
12	Southeast Virginia	50.18	44.47	5.71	113%
13	Eastern Shore	40.61	39.35	1.26	103%
	Statewide	40.87	42.32	-1.45	97%

	DROUGHT REGION	OBSERVED	Aug 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	50.97	47.70	3.27	107%
2	New River	44.52	42.44	2.08	105%
3	Roanoke	47.33	47.98	-0.65	99%
4	Upper James	40.80	43.35	-2.55	94%
5	Middle James	43.02	46.66	-3.64	92%
6	Shenandoah	38.69	40.13	-1.45	96%
7	Northern Virginia	40.89	44.65	-3.76	92%
8	Northern Piedmont	42.87	47.24	-4.37	91%
9	Chowan	46.84	47.87	-1.02	98%
10	Northern Coastal Plain	41.21	46.18	-4.96	89%
11	York-James	49.04	50.86	-1.82	96%
12	Southeast Virginia	52.41	49.59	2.82	106%
13	Eastern Shore	43.53	43.22	0.30	101%
	Statewide	44.62	46.15	-1.53	97%

	DROUGHT REGION	OBSERVED	Jul 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	55.69	52.18	3.51	107%
2	New River	48.45	46.23	2.22	105%
3	Roanoke	50.76	52.37	-1.61	97%
4	Upper James	44.90	47.39	-2.49	95%
5	Middle James	46.86	51.07	-4.21	92%
6	Shenandoah	43.00	43.89	-0.90	98%
7	Northern Virginia	43.85	48.42	-4.57	91%
8	Northern Piedmont	46.71	51.64	-4.93	90%
9	Chowan	50.27	52.38	-2.11	96%
10	Northern Coastal Plain	44.73	50.63	-5.90	88%
11	York-James	52.76	55.96	-3.20	94%
12	Southeast Virginia	58.09	54.66	3.43	106%
13	Eastern Shore	47.43	47.22	0.21	100%
	Statewide	48.52	50.49	-1.97	96%

	DROUGHT REGION	OBSERVED	Jun 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	59.24	56.32	2.91	105%
2	New River	50.93	50.08	0.85	102%
3	Roanoke	53.67	56.26	-2.59	95%
4	Upper James	47.50	51.10	-3.60	93%
5	Middle James	48.97	54.58	-5.61	90%
6	Shenandoah	46.88	47.60	-0.72	98%
7	Northern Virginia	48.49	52.28	-3.79	93%
8	Northern Piedmont	51.97	55.65	-3.68	93%
9	Chowan	51.99	56.03	-4.04	93%
10	Northern Coastal Plain	49.17	54.19	-5.02	91%
11	York-James	54.89	59.37	-4.48	92%
12	Southeast Virginia	60.00	58.27	1.73	103%
13	Eastern Shore	51.99	50.20	1.78	104%
	Statewide	51.62	54.28	-2.66	95%

	DROUGHT REGION	OBSERVED	May 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	61.81	61.14	0.67	101%
2	New River	53.50	54.29	-0.79	99%
3	Roanoke	57.51	60.59	-3.08	95%
4	Upper James	50.86	55.38	-4.52	92%
5	Middle James	53.19	58.82	-5.62	90%
6	Shenandoah	51.41	51.44	-0.03	100%
7	Northern Virginia	56.95	56.62	0.32	101%
8	Northern Piedmont	58.16	59.87	-1.71	97%
9	Chowan	55.39	60.12	-4.73	92%
10	Northern Coastal Plain	55.42	58.35	-2.93	95%
11	York-James	57.65	63.64	-5.99	91%
12	Southeast Virginia	63.78	62.13	1.65	103%
13	Eastern Shore	57.29	53.72	3.56	107%
	Statewide	55.83	58.54	-2.71	95%

	DROUGHT REGION	OBSERVED	Apr 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	66.13	64.90	1.23	102%
2	New River	58.29	57.84	0.45	101%
3	Roanoke	62.91	64.39	-1.48	98%
4	Upper James	55.69	58.78	-3.09	95%
5	Middle James	59.39	62.16	-2.77	96%
6	Shenandoah	56.82	54.36	2.45	105%
7	Northern Virginia	62.61	59.92	2.69	104%
8	Northern Piedmont	64.18	63.16	1.02	102%
9	Chowan	62.60	63.55	-0.95	99%
10	Northern Coastal Plain	61.38	61.44	-0.06	100%
11	York-James	63.96	66.94	-2.98	96%
12	Southeast Virginia	70.46	65.38	5.08	108%
13	Eastern Shore	61.71	56.64	5.07	109%
	Statewide	61.46	61.96	-0.50	99%

	DROUGHT REGION	OBSERVED	Mar 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	70.51	69.15	1.36	102%
2	New River	60.93	61.51	-0.59	99%
3	Roanoke	66.11	68.66	-2.55	96%
4	Upper James	58.51	62.57	-4.06	94%
5	Middle James	62.68	66.22	-3.53	95%
6	Shenandoah	59.61	57.56	2.05	104%
7	Northern Virginia	65.05	63.58	1.47	102%
8	Northern Piedmont	67.28	66.97	0.31	100%
9	Chowan	66.51	67.92	-1.41	98%
10	Northern Coastal Plain	63.86	65.72	-1.86	97%
11	York-James	67.80	71.63	-3.83	95%
12	Southeast Virginia	73.39	69.58	3.81	105%
13	Eastern Shore	63.49	60.95	2.54	104%
	Statewide	64.64	66.00	-1.36	98%

	DROUGHT REGION	OBSERVED	Feb 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	73.71	72.73	0.98	101%
2	New River	62.94	64.44	-1.50	98%
3	Roanoke	68.40	71.97	-3.57	95%
4	Upper James	60.73	65.42	-4.70	93%
5	Middle James	65.33	69.34	-4.01	94%
6	Shenandoah	61.91	59.97	1.94	103%
7	Northern Virginia	67.84	66.25	1.59	102%
8	Northern Piedmont	69.92	69.94	-0.02	100%
9	Chowan	69.35	71.09	-1.73	98%
10	Northern Coastal Plain	66.42	68.86	-2.44	96%
11	York-James	71.10	75.16	-4.06	95%
12	Southeast Virginia	77.51	73.08	4.43	106%
13	Eastern Shore	66.79	64.14	2.65	104%
	Statewide	67.28	69.13	-1.86	97%

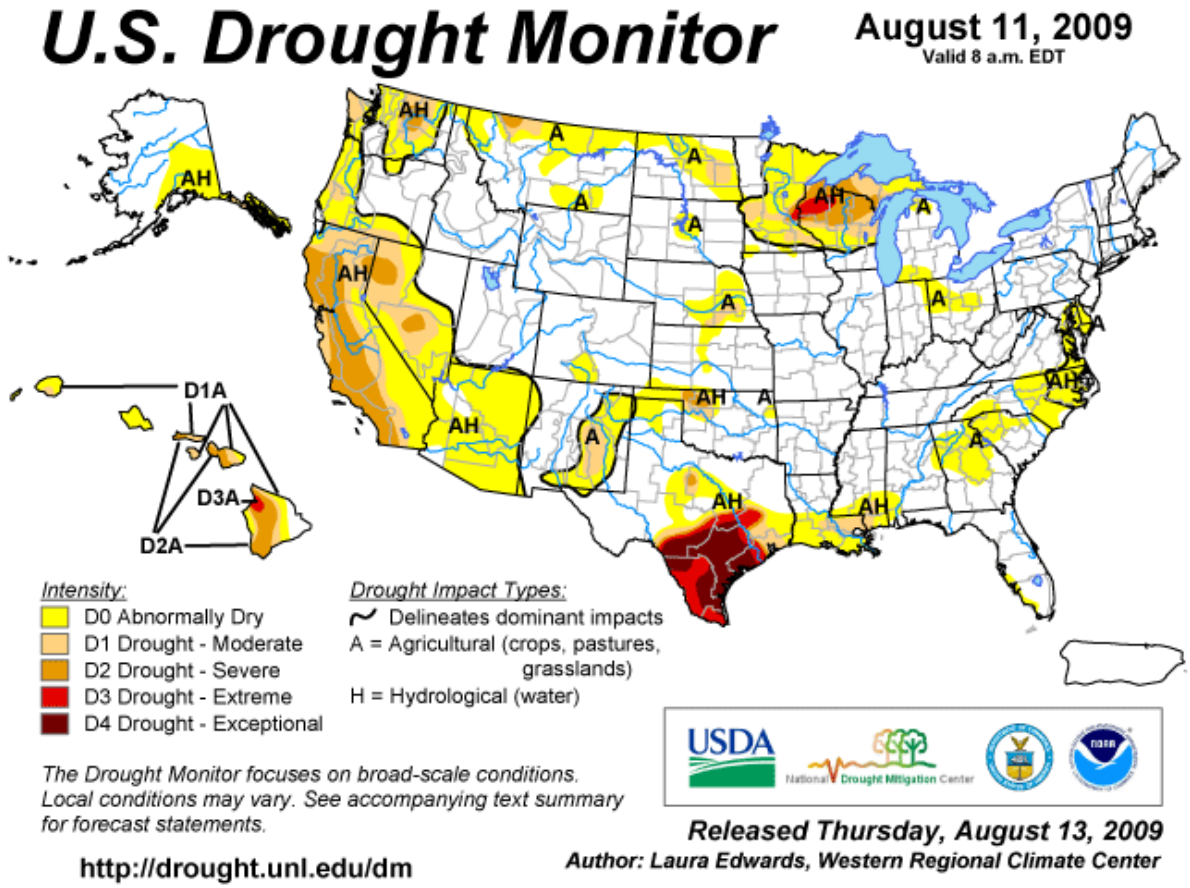
	DROUGHT REGION	OBSERVED	Jan 1, 2008 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	76.69	76.46	0.22	100%
2	New River	64.22	67.65	-3.44	95%
3	Roanoke	69.29	75.89	-6.60	91%
4	Upper James	62.36	68.70	-6.34	91%
5	Middle James	66.38	73.00	-6.61	91%
6	Shenandoah	62.92	62.82	0.10	100%
7	Northern Virginia	69.04	69.53	-0.49	99%
8	Northern Piedmont	70.98	73.46	-2.47	97%
9	Chowan	70.42	75.20	-4.77	94%
10	Northern Coastal Plain	67.58	72.61	-5.03	93%
11	York-James	73.81	79.30	-5.49	93%
12	Southeast Virginia	78.92	77.24	1.68	102%
13	Eastern Shore	68.73	67.70	1.03	102%
	Statewide	68.65	72.77	-4.13	94%

	DROUGHT REGION	OBSERVED	Dec 1, 2007 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	79.98	80.10	-0.12	100%
2	New River	66.82	70.36	-3.55	95%
3	Roanoke	72.59	79.14	-6.55	92%
4	Upper James	65.66	71.65	-5.99	92%
5	Middle James	69.59	76.17	-6.58	91%
6	Shenandoah	65.95	65.41	0.54	101%
7	Northern Virginia	72.03	72.63	-0.60	99%
8	Northern Piedmont	74.34	76.74	-2.40	97%
9	Chowan	74.68	78.22	-3.54	95%
10	Northern Coastal Plain	70.70	75.89	-5.19	93%
11	York-James	77.92	82.69	-4.77	94%
12	Southeast Virginia	82.77	80.42	2.35	103%
13	Eastern Shore	73.43	70.94	2.49	104%
	Statewide	71.97	75.89	-3.92	95%

	DROUGHT REGION	OBSERVED	Nov 1, 2007 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	82.15	83.38	-1.23	99%
2	New River	67.38	73.39	-6.01	92%
3	Roanoke	73.15	82.50	-9.35	89%
4	Upper James	66.69	75.01	-8.32	89%
5	Middle James	70.26	79.68	-9.42	88%
6	Shenandoah	67.33	68.46	-1.14	98%
7	Northern Virginia	73.53	76.04	-2.51	97%
8	Northern Piedmont	75.55	80.54	-4.99	94%
9	Chowan	75.31	81.33	-6.02	93%
10	Northern Coastal Plain	71.97	79.03	-7.06	91%
11	York-James	78.72	86.06	-7.34	91%
12	Southeast Virginia	83.33	83.49	-0.15	100%
13	Eastern Shore	74.45	73.88	0.56	101%
	Statewide	72.99	79.12	-6.14	92%

	DROUGHT REGION	OBSERVED	Oct 1, 2007 NORMAL	- Aug 15, 2009 DEPARTURE	% OF NORM.
1	Big Sandy	84.83	86.26	-1.43	98%
2	New River	73.50	76.56	-3.07	96%
3	Roanoke	78.89	86.21	-7.32	92%
4	Upper James	70.72	78.26	-7.54	90%
5	Middle James	75.25	83.52	-8.27	90%
6	Shenandoah	70.75	71.65	-0.90	99%
7	Northern Virginia	77.76	79.52	-1.77	98%
8	Northern Piedmont	80.03	84.53	-4.50	95%
9	Chowan	80.15	84.91	-4.76	94%
10	Northern Coastal Plain	76.89	82.54	-5.65	93%
11	York-James	83.25	89.59	-6.34	93%
12	Southeast Virginia	88.50	87.15	1.35	102%
13	Eastern Shore	78.13	77.09	1.04	101%
	Statewide	77.61	82.62	-5.02	94%

APPENDIX B


U.S. Drought Monitor
August 11, 2009
Valid 8 a.m. EDT
AH
A
D1A
D3A
D2A
Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional
Drought Impact Types:
Delineates dominant impacts
A = Agricultural (crops, pastures, grasslands)
H = Hydrological (water)
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
http://drought.unl.edu/dm
USDA
National Drought Mitigation Center
Released Thursday, August 13, 2009
Author: Laura Edwards, Western Regional Climate Center

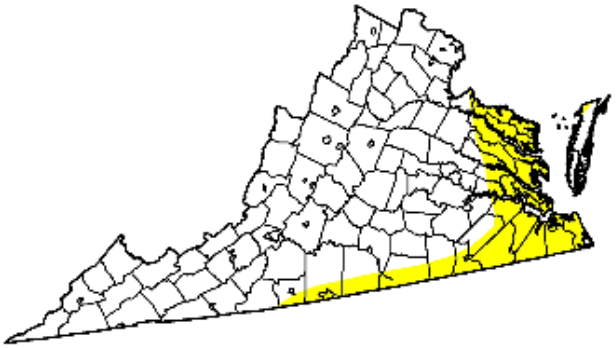
APPENDIX C

U.S. Drought Monitor
Virginia

August 11, 2009
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	83.1	16.9	0.0	0.0	0.0	0.0
Last Week (08/04/2009 map)	83.1	16.9	0.0	0.0	0.0	0.0
3 Months Ago (05/19/2009 map)	99.7	0.3	0.0	0.0	0.0	0.0
Start of Calendar Year (01/06/2009 map)	63.0	37.0	24.7	0.0	0.0	0.0
Start of Water Year (10/07/2008 map)	57.8	42.2	25.1	1.6	0.0	0.0
One Year Ago (08/12/2008 map)	27.4	72.6	39.9	9.7	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

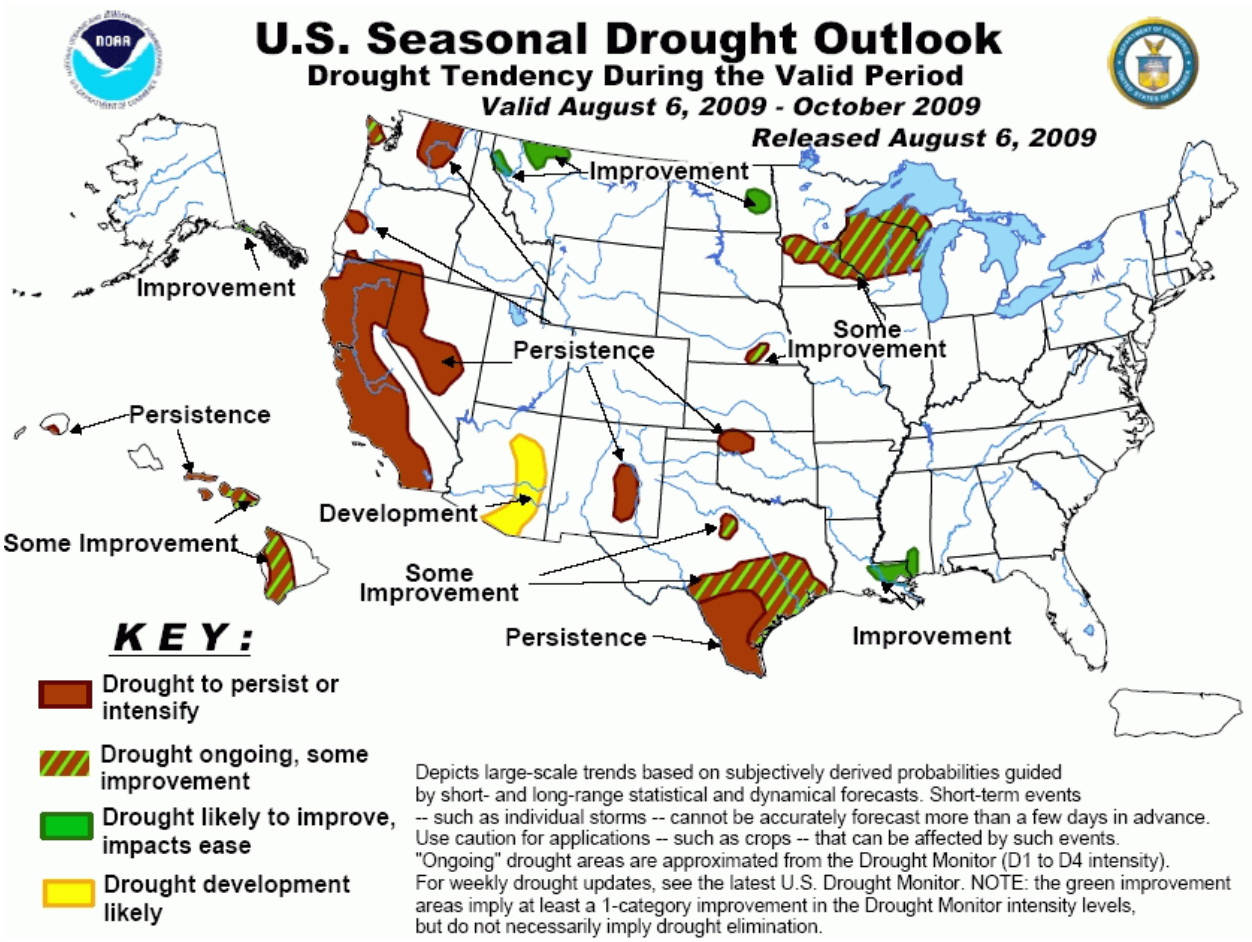
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

Released Thursday, August 13, 2009

Author: Laura Edwards, Western Regional Climate Center

APPENDIX D


U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid August 6, 2009 - October 2009
Released August 6, 2009
Improvement
Improvement
Persistence
Some Improvement
Persistence
Development
Some Improvement
Some Improvement
Persistence
Improvement
KEY:
Drought to persist or intensify
Drought ongoing, some improvement
Drought likely to improve, impacts ease
Drought development likely
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

APPENDIX E
Condition of Public Water Supplies
August 11, 2009

ODW Drought Situation Report

Date: **8/11/09**

	Restriction totals
Mandatory	2
Voluntary	23
Total	**25**

N-None
M-Mandatory
V-Voluntary

B-Better
S-Stable/Same
W-Worse

PWSID	Waterworks	Source Name	Restrictions	Situation	Population Served
3053280	DCWA Central (Dinwiddie County)	Appomattox River Water Authority (ARWA)	V	**S** - 08/10/09 - Voluntary restrictions began on 7/29/08. ARWA lifted voluntary restrictions September 2008. No formal action taken to rescind voluntary restrictions in Dinwiddie County to date.	6,800
3081550	GCWSA - Jarratt	Nottoway River	N	**S** - 08/06/09 - Waterworks production rate reduced due to lower demand; river level sufficient to allow plant operation at 2.0 mgd.	7,190
3093120	Isle of Wight County	Suffolk	V	**S** - 08/10/09 - Obtains water from Suffolk. Follows Suffolk's lead on conservation.	1,284
3550050	Chesapeake - Western Branch system	City of Portsmouth	V	**S** -08/10/09 This portion of the city is consecutive to (receives water from) the city of Portsmouth. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Portsmouth's lead on conservation.	36,404

3550051	Chesapeake	Northwest River, City of Norfolk Raw Water (Lake Gaston)	V	**B** - 08/10/09 City Council voted to go to voluntary conservation city-wide - took effect on 24 Oct 2007. Continuing to follow Portsmouth's lead. Chlorides are used as an indicator of drought, the higher the levels the more concentrated the contaminant in a lesser amount of surface water. The chlorides average 27 mg/l (range 15-39 mg/L) to date. Continuing to purchasse raw water from Norfolk (7.0 MGD average)	102,292
3550052	Chesapeake - South Norfolk system	City of Norfolk	V	**S** -08/10/09-This portion of the city is consecutive to (receives water from) the city of Norfolk. City Council voted to go to voluntary conservation city-wide - it took effect on 24 Oct 2007. Still following Norfolk's lead on conservation.	38,706
3570150	Colonial Heights	ARWA	V	**S** - 08/10/09 - Lifted mandatory restrictions on 12/1/07. Voluntary restrictions currently in place.	17,286
3595250	Emporia	Meherrin River	N	**S** - 08/06/09 - Water flowing over dam, reservoir level sufficient for normal operation.	5,600
3670800	Virginia-American Water Company (Hopewell)	Appomattox & James Rivers	N	**S** - 08/05/2009 - Level at intakes still sufficient to supply plant. 2.98 inches of rainfall during July, rainfall below average.	25000 - Primary / 42463 Total including Consecutive System (Ft. Lee)
3700500	Newport News	Chickahomony River, Skiffs Creek, Diascand, Little Creek, Harwoods Mill, Lee Hall	N	**W --** 08/06/09 - Total reservior capacity at 94.11%. Down about 1.7% from last report.	406,000

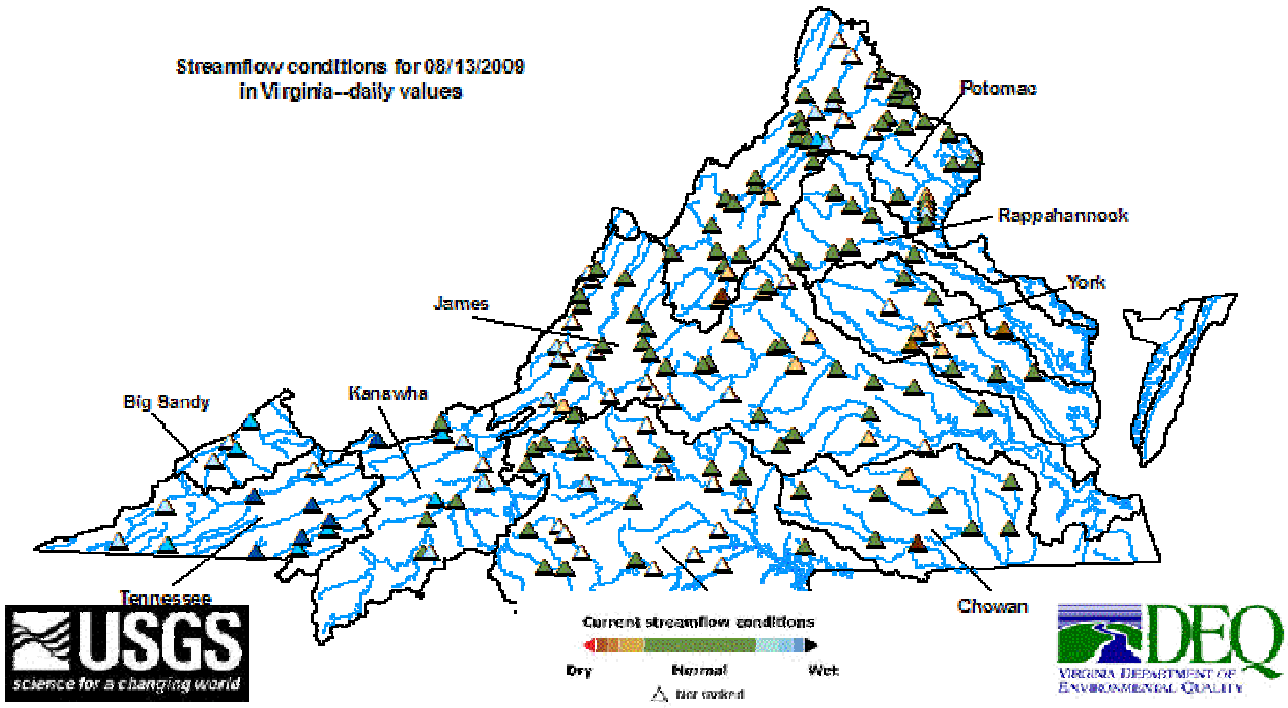
3710100	Norfolk	Lake Prince, Lake Burnt Mills, Western Branch reservoir, Nottoway River, Blackwater River, 4 western wells; Little Creek reservoir, Lakes Smith, Lawson, Whitehurst, and Wright. Lake Gaston.	V	**W** - As of 08/03/09, reservoirs at 84% (down from 89.5% on 07/06/09). Historic reservoir capacity is 87.5% at this time of year. Avg. pumping from Lake Gaston = 45 MGD. Called for voluntary conservation 11/1/07.	261,250 - Primary / 755,617 - Total including consecutive systems (Va Beach + military bases).
3740600	Portsmouth	Lakes Cohoon, Meade, Kilby, and Speights Run	V	**S** - As of 08/07/09, reservoirs at 95% (down from 100% on 06/19/09). Median reservoir capacity is 94% for the month and historical average capacity is 90% (period of 1969-2008). The emergency wells are off. Called for voluntary conservation on 10/10/07.	100,400 - Primary / 120,400 Total including consecutive systems (military bases)
3800805	Suffolk	Lone Star Lakes, Cumps Mill Pond	V	**S** -08/10/09-Will follow Portsmouth's lead and the region as far as conservation. Average reservoir levels : Southern Lakes at 93.0% capacity, for the Northern Lakes at 97.1% and Crumps Mill Pond at 98.3% The Southern Lakes are for emergency use only. Overall they are at 96.49% capacity for the reservoirs for the period (May-June 2009). The operator states that thiey are in better condition this year when compared to 2008 (81.41%) for the same period. Still purchasing water from Portsmouth per their contract, no drought measure taken to date.	62,562
3810900	Virginia Beach	Norfolk	V	**W** - 08/03/09 - Obtains water from Norfolk. Called for voluntary conservation on 9/19/07.	423,743

3830850	Williamsburg	Waller Mill Reservoir	N	**B -** 08/07/09 _ "1.5" below primary spillway - not bad for this time of the year!" from the plant superintendent	16,400
4041035	APPOMATTOX RIVER WATER AUTHORITY	Surface water; Lake Chesdin	N	**S-** Wholesaler to Chesterfield County, Prince George County, Dinwiddie County; Cities of Petersburg and Colonial Heights. Reservoir is at full level.	200,000
4041845	CHESTERFIELD CO CENTRAL WATER SYSTEM	Surface water; Swift Creek reservoir; purchases finished water	N	**S-** Purchases water from the City of Richmond and the Appomattox River Water Authority. Reservoir is at full level.	286,000
4057800	TAPPAHANNOCK, TOWN OF	Groundwater wells	N	**S**	2,100
4073311	GLOUCESTER CO WATER TREATMENT PLT	Surface water, Beaverdam reservoir; 2 deep groundwater wells	N	**S-**Reservoir is full.	8,870
4075283	EASTERN GOOCHLAND CENTRAL WATER SYSTEM	Purchased surface water	N	**S-**purchases water from Henrico County	2,500
4075735	JAMES RIVER CORRECTIONAL CTR	Surface water; James River	V	**S-** Conservation at all DOC facilities	9,300
4085398	HANOVER SUBURBAN WATER SYSTEM	Surface water; North Anna River; some groundwater wells; purchases finished water	V	**S (see Richmond)**	71,000
4085770	SPRING MEADOWS-MEADOW GATE	Groundwater wells	N	**S-** A replacement well has been drilled and other improvements are proposed in the PER.	2,300
4087125	HENRICO COUNTY WATER SYSTEM	Surface water; James River	V	**S (see Richmond)**	289,000
4101900	WEST POINT, TOWN OF	Groundwater wells	N	**S**	3,000
4127110	DELMARVA PROPERTIES	Groundwater wells	V	**S-**New Kent Co. encourages conservation at all county owned waterworks.	7,700
4145675	POWHATAN COURTHOUSE	Groundwater wells	N	**S**	2,600
4193280	COLONIAL BEACH, TOWN OF	Groundwater wells	N	**S**	3,300

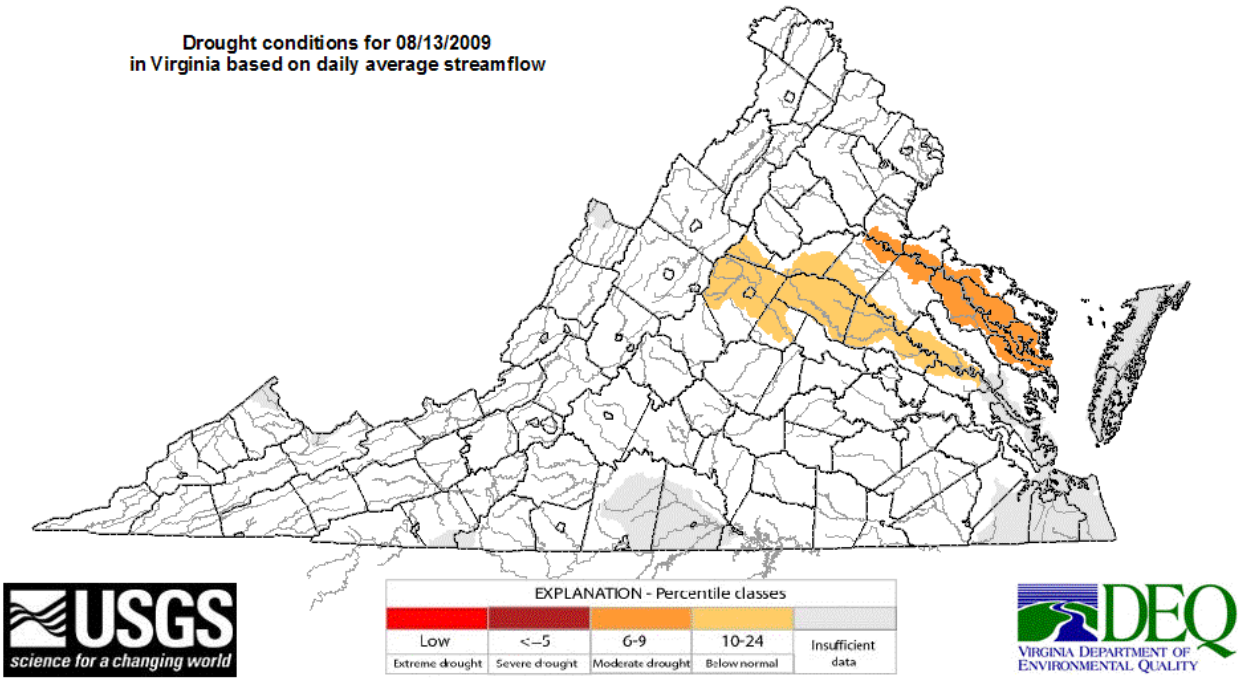
4760100	RICHMOND, CITY OF	Surface water; James River	V	S- water levels do not affect intake; James River Regional Flow Management Plan set restrictions based on James River level for counties of Henrico, Chesterfield, Goochland, and Hanover counties, which purchase water from the City.	197,000
5143210	Town of Gretna	Georges Creek Res	N	**S - reservoir full but not overflowing as of 8/4**	2,500
5029085	Buckingham County	Troublesome Creek Reservoir	N	**S**	5,751
5037300	Town of Keysville	Keysville Reservoir	N	**S**	800
5780600	HCSA-South Boston	Dan River	N	**S**	11,388
5141640	Town of Stuart	South Mayo River	N	**S**	1,500
5147170	Town of Farmville	Appomattox River	N	**S**	7,011
5011050	Town of Appomattox	Wells	V	**S**	1,708
5067265	Hales Point	Wells	N	**S - hauling water**	46
5067348	Westlake Water Co	Wells	V	**S - hauling water**	620
5690400	City of Martinsville	Beaver Creek Reservoir	N	**S - reservoir now 5.6 incles below spillway**	16,000
6061200	Marshall	Groundwater	**M**	**S** - The WSA Alert Messaging Service maintains the Water Use Restriction Notice as of 8/7/2009.	2,134
6107150	Town of Hamilton	Groundwater	V	S - 8/11/09 No water supply problems. Voluntary water use restrictions until new Well 14 is placed in service.	2,000
6107200	Town of Hillsboro	Spring/Well	V	S - 8/11/09 Combined yield from new well and spring has not been consistently adequate to meet current demand. A leak survey revealed 10 potential leaks in the distribution system. Last ran out of water in March.	58
6107601	LCSA Raspberry Falls Subdivision	Groundwater	V	**S** -8/11/09 Both wells in service. No problems with water supply - quantity. Voluntary conservation in place beginning 3/11/08 due to concerns about possible GUDI sources.	394

6107400	Town of Lovettsville	Groundwater	V	**S** -8/11/09 Voluntary water use restrictions remain in place; however there is no problem with water supply.	1,280
6107650	Town of Round Hill	Groundwater	V	S - 8/11/09 - No water supply problems.Voluntary water use restrictions replace mandatory water use restrictions on 4/1/08.	3,156
6137300	Rapidan Service Authority - Rt. 15	Purchase treated surface water from Town of Orange (Rapidan River)	N	**S - Town of Orange raw water availability is well above minimum.**	273
6137400	Town of Gordonsville	Purchase treated surface water from RSA and Town of Orange	N	**S**--No water use restrictions are in place.	1,800
6137500	Town of Orange	Rapidan River	V	**S** - 8/7/09 **- Fourteen day running average of Rapidan River flow is 230 cfs (withdrawal restrictions are imposed below 44 cfs).**	4,500
6153260	Woodbridge Mobile Home Park	Groundwater	**M**	**S** -- 6/8/09 Low water pressure problem continues. Waterworks continues to have low pressure due to inadequate sources and leaks in the distribution system. This problem is indirectly related to drought as source problems existed previously. **A new well was drilled in November 2008. Developmental Testing completed in December 2008, all water quality results reviewed by VDH ODW. Plans for connecting new well to waterworks are under review.**	320

APPENDIX F


Streamflow conditions for 08/13/2009
in Virginia--daily values
Potomac
Rappahannock
York
James
Big Sandy
Kanawha
Tennessee
Chowan
USGS
science for a changing world
Current streamflow conditions
Dry
Normal
Wet
Not ranked
DEQ
VIRGINIA DEPARTMENT OF
ENVIRONMENTAL QUALITY

APPENDIX G
Drought Watch -- USGS State Information on Drought
Map of below normal 7-day average streamflow

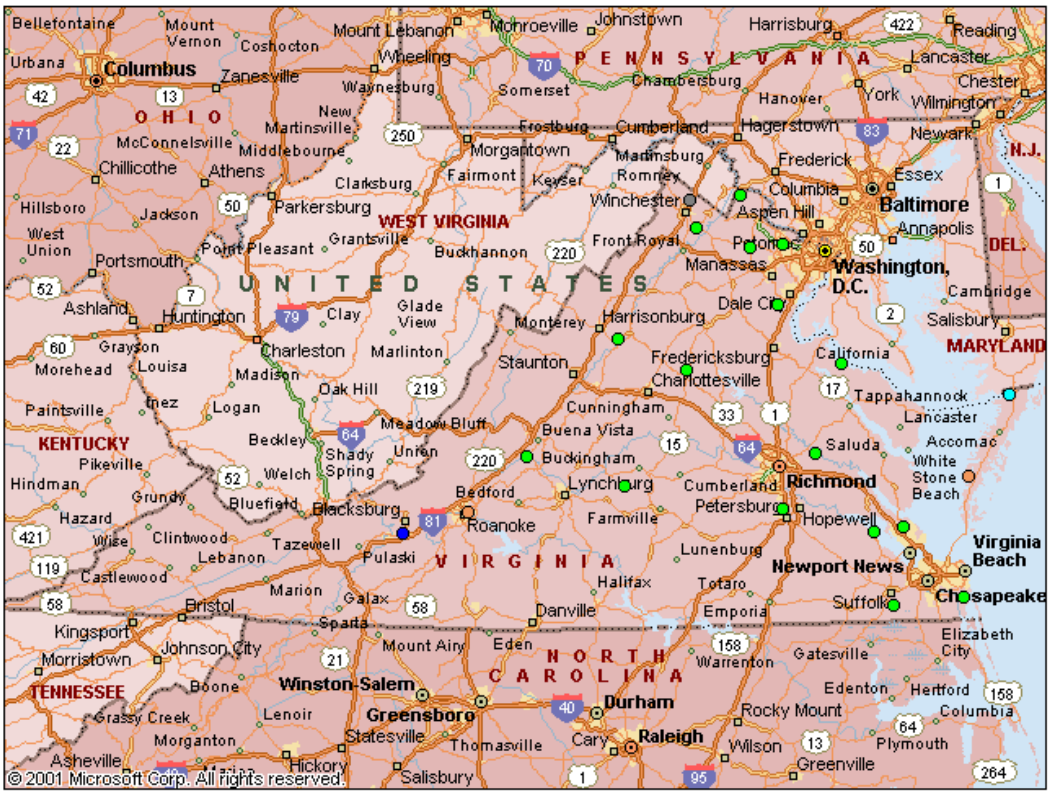


APPENDIX H
Virginia Climate Response Network

August 13, 2009

Virginia Climate Response Network

Hover mouse over site for information.
Click site symbol to open page with well information.



Explanation - Percentile classes (symbol color based on most recent measurement)							
New Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	New High	Not Ranked

Map generated 8/13/2009 9:02:35 AM